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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,186	03/12/2004	David L. Detlefs	SMY-114.01	8185
45774	7590	01/26/2007	EXAMINER	
CHAPIN INTELLECTUAL PROPERTY LAW, LLC			AHMED, HAMDYS	
WESTBOROUGH OFFICE PARK				
1700 WEST PARK DRIVE			ART UNIT	PAPER NUMBER
WESTBOROUGH, MA 01581			2188	
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE		DELIVERY MODE	
3 MONTHS	01/26/2007		PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/799,186	DETLEFS, DAVID L.
	Examiner Hamdy S. Ahmed	Art Unit 2188

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 03/12/2004.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-33 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) (1-16 and 25-33) is/are allowed.  
 6) Claim(s) 17-24 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 12 March 2004 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 07/14/2004.

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

First, a claimed signal is clearly not a "process" under sec. 101 because signal is a form of energy. Energy is not of the four categories of invention and therefore this claim is not statutory. Energy is not series of step or act and thus is not a process. Energy is not a physical article or object and such is not a machine or manufacture. Energy is not combination of substances and therefor not a composition of matter.

Claims 17- 24 are rejected under 35 U.S.C. 101 because the claims contain the limitation of an electronic signal, and thus not patentable.

### ***Allowable Subject Matter***

**Claims 1- 16 and 25 – 33 are allowed.**

With respect to claims 1 –16, the prior art of record, specifically Garthwaite (US No: 2004/0122874 A1), Garthwaite (US No: 2004/016795 A1), fails to teach or suggest the limitation of "executing a garbage collector that: treats the heap as divided into regions; determines whether objects to which memory in the heap has been dynamically allocated satisfy a popular-object criterion; places into certain, popular-object regions the objects that it thereby determines satisfy such a criterion and excludes from such regions objects that it thereby determines do not satisfy such a criterion; maintains for each of a plurality of the regions other than the popular-object regions a respective remembered set that lists where references in other regions to that region have been written; and updates the remembered sets in response to reference-written notifications from the mutator; and so executing the mutator that, in at least some situations in which the mutator writes a reference into a reference field in

the heap, the mutator: makes a normal-region determination of whether the reference reference to an object that is not located in a popular-object region; makes a reference-written notification to the garbage collector if the normal-region determination's result is that the reference refers to an object that is not located in a popular-object region; and otherwise refrains from making such a notification.

**With respect to claims 25 – 33** the prior art of record, specifically Garthwaite (US No: 2004/0122874 A1), Garthwaite (US No: 2004/016795 A1), fails to teach or suggest the limitation of counts references to objects in the region with which that remembered set is associated; and places into popular-object regions objects to which the numbers of references are thereby found to exceed to a popular-object threshold. The garbage collector treats the heap as additionally divided into cards; the mutator maintains at least one remembered-set log; and the reference-written notification includes placing into one such remembered-set log an identifier of the card in which the reference's containing object starts.

#### **The Prior Art Of Record**

For example Garthwaite (US No: 2004/0193662 A1) teaches, **REMEMBERED SETSCRUBBING TO REMOVE STALE ENTER IN AQN INCREMENTTAL, GARRARGE COLLECTOR.**

For example Garthwaite (US No: 2004/0187102 A1) teaches, **combining write-barriers within an inner loop with fixed step.**

For example Subramoney et al. (US No: 2006/0143421 A1) teaches, **Dynamic Performance monitoring-based approach to memory management.**

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hamdy S. Ahmed whose telephone number is 571-270-1027. The examiner can normally be reached on M-TR 7:30-5:00pm and Every 2nd Friday 7:30-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hung Sough can be reached on 571-272-4199. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HA  
Hamdy Ahmed  
1/11/07

*DS*  
HYUNG SOUGH  
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